

P a t e n t   c l a i m s

1.     : Method for the testing of packs (10) of formable packaging material, in particular of cuboid-shaped (cigarette) packs (10) having at least one wrapper of (thin) cardboard, **characterized in that** the pack (10) is impinged with a defined pressure and the resulting deformations of the pack (10) are measured.
- 5    2.     Method according to Claim 1, **characterized in that** the measured deformations of the packs (10) are compared to default measurements of the same packs or the same kind of packs.
3.     Method according to Claim 1 or 2, **characterized in that** the resistance of the pack (10) as counterforce, which varies as the result of increasing deformation of the  
10    pack (10) under uniform movement of a pressure-exerting means, is measured and preferably displayed or plotted in graphic form.
4.     Method according to Claim 3, **characterized in that** the graphic representation of the course of force acting on the pack (10) during its deformation is plotted as a curve, namely as the course of force over the distance traveled by a pressure-exerting means  
15    acting on the pack (10).

5. Method according to Claim 3, **characterized in that** the course of force acting on the pack (10) during uniform movement of the pressure-exerting means is represented as a derivative, in particular as a second derivative.

6. Method according to Claim 1, **characterized in that** force is transferred to the pack surface (10), in particular across the entire pack surface, preferably on the entire large-surface front side (13) or rear side (14) of a cuboid-shaped pack.

7. Method according to Claim 1, **characterized in that** the pressure-exerting means is applied to the pack (10) with a uniform, in particular constant, movement and that the force acting in the region of the pack (10) is measured by a pressure gauge, in particular by a load cell (28).

8. Method according to Claim 1, **characterized in that** the deformation of the pack (10) is measured by the movement of the pressure-exerting means, namely by the distance covered by same with the help of a position sensor (31).

9. Method according to Claim 7 and 8, **characterized in that** the measuring results of the load cell (28) and those of the position sensor (31) are evaluated by a computer and plotted as a curve, preferably in the form of its second derivative.

10. Apparatus for the testing of packs (10) of formable packaging material, in particular of cuboid-shaped (cigarette) packs (10) having at least one wrapper of (thin) cardboard, **characterized in that** the pack (10) is positioned between opposing pressure-exerting means, in particular between an (upper) pressure plate (26) and a (lower) bearing plate (27), it being possible to move at least one pressure-exerting means, preferably the pressure plate (26), against the pack (10).

11. Apparatus according to Claim 10, **characterized in that** the pressure plate (26) is mounted on a carrier which can be moved up and down, in particular on a pressure strut (24), which can be displaced by means of a uniformly driven gear mechanism.

12. Apparatus according to Claim 10 or 11, **characterized in that** the bearing plate (27) is connected to the load cell (28).

13. Apparatus according to Claim 10, **characterized by** a supporting framework with an upper traverse (22) and a lower traverse (23), which are connected to one another on the supporting columns (20, 21), with the pressure strut (24) being displaceably mounted on the supporting columns (20, 21) and the load cell (28) positioned on the lower traverse (23).

14. Apparatus according to Claim 10, characterized in that attached to the displaceable pressure-exerting means, in particular to the displaceable pressure strut (24), is a distance-measuring device, in particular a position sensor (31).

15. Apparatus according to Claim 10, characterized in that a test station (39) with an apparatus for the compressed deformation of a pack (10) is assigned to a packaging unit (42), preferably for testing samples of packs (10).

16. Apparatus according to Claim 15, characterized in that the test station is positioned in the region of a pack conveyor (38) between a packer (36) and a cello-packer (37).

10 17. Apparatus according to Claim 15, characterized in that a plurality of packaging units (42) having at least one test station (39) each are connected to a central computer (43) for the central logging of operational data concerning the testing results.

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